Commercial Horticulture

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V(A). Planned Program (Summary)

1. Name of the Planned Program

Commercial Horticulture

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	25%	25%		
205	Plant Management Systems	50%	50%		
215	Biological Control of Pests Affecting Plants	10%	10%		
216	Integrated Pest Management Systems	15%	15%		
	Total	100%	100%		

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2007	Extension		Research	
	1862	1890	1862	1890
Plan	8.5	0.6	0.0	0.0
Actual	8.8	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
182166	0	0	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
209285	0	0	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
1439857	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The activities described here and sumarized in this report relate to (1) Extension Team Project, ETP19C Commercial Fruit Pest Management.

Conducted research related to plum curculio monitoring and insecticide use reduction. Set up pheromone traps for major fruit pest species. Products developed, IPM resources and updates. Conducted fruit grower meetings with IPM updates. Conducted agent training on fruit IPM. Partenered with Alabama Department of Agriculture to conduct Fruit IPM update at Chemical Dealer Meetings, Pesticide Recertification. Provided grower counseling and updates.

Commercial Horticulture

2. Brief description of the target audience

Primary target audience are educators and commerical fruit producers

V(E). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons (contacts) reached through direct and indirect contact methods

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	41000	97000	4000	10000
2007	2237	18161	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year	Target
Plan:	0
2007:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan			
2007	5	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

? This program area will include numerous output activities and methods as part of the Extension Team Projects (ETPs) which are described/explained in the prior "outcome activities and methods sections." The success of many of these outcomes will be formally evaluated/measured by using individual activity evaluation forms designed specifically for each activity, the success of other activities and methods will be measured by the level of participation in the activity. In the target boxes below for each year, we are indicating the number of individual activities within the ETPs for this program area that will be formally evaluated using an evaluation instrument designed specifically for that activity.

Year	Target	Actual
2007	2	0

Output #2

Output Measure

? IPM Research and dissemination - Southeastern Professional Fruit Workers Workshop.

Year	Target	Actual
2007	{No Data Entered}	35

Output #3

Output Measure

? Educational meetings

Year	Target	Actual
2007	{No Data Entered}	250

Output #4

Output Measure

? Grower counseling

Year	Target	Actual
2007	{No Data Entered}	1959

Output #5

Output Measure

? Publications, Fruit IPM Guides

Year	Target	Actual
2007	{No Data Entered}	350

Output #6

Output Measure

? Agent training

Year	Target	Actual
2007	{No Data Entered}	6

Output #7

Output Measure

? Web Blog

Year	Target	Actual
2007	{No Data Entered}	6000

Output #8

Output Measure

? Newsletters, media

Year	Target	Actual
2007	{No Data Entered}	11805

Output #9

Output Measure

? Grower demonstrations

Year	Target	Actual
2007	{No Data Entered}	0

Output #10

Output Measure

? Freeze damage, crop loss, and economic assessment

Year	Target	Actual
2007	{No Data Entered}	250

V(G). State Defined Outcomes

O No.	Outcome Name
1	For ETP19A - Alabama Certified Landscape Professional (ACLP) Training and Testing, and ETP19B - Alabama Certified Nursery Professional (ACNP) Training and Testing, agents will keep participation records for training, test scores and continuing education certification points. They will monitor the testing and determine consistently weak areas that identifies opportunities for training. Agents will be expected to document the number of clientele that were trained or that were assisted with related questions. An annual report will be required. An annual report form will be developed and distributed to all participating agents by the Extension team project leader. This will be done on a fiscal year basis to be used in reporting to the ALNLA and will be due October 1,of each year.
2	Each ACES employee is required to provide a success story on the program activity which they felt best demonstrates the impacts of their work. These success stories contain the following elements: Why: Explain the reason the program was done, or the situation or problem that the program addressed What: Specifically what was done and how it was done. When: If this was a one-time event, the date it occurred. If it is was a series of events, or an on-going program, when it began. Where: Specific location-- the county or counties involved. Who and how many: The &ldquowho&rdquo includes both who did the program and who were the clients of the program, as well as how many people were served. So what: This is the part that gives the real meaning to &ldquosuccess&rdquo. The basic question to be answered in this part is &ldquowhat difference did this program make&rdquo. The difference may be measured in terms of dollars, or in changes in habits, lifestyles or attitudes. Whenever possible use numbers to show the effect of the program. If it is not possible to use numbers, provide a qualitative measurement like client comments or another type of testimonial about the program.
3	Research to increase knowledge on behavior and management of plum curculio in peaches, data collection/reporting. Increase educator knowledge on research and use of monitoring techniques. Increase grower knowledge of fruit pests, resistance management,and on-farm monitoring.
4	Increase on-farm use of pest monitoring in pest management decisions.
5	Provide growers, state and federal officials, and general public accurate crop and economic losses.

Commercial Horticulture

Outcome #1

1. Outcome

For ETP19A - Alabama Certified Landscape Professional (ACLP) Training and Testing, and ETP19B - Alabama Certified Nursery Professional (ACNP) Training and Testing, agents will keep participation records for training, test scores and continuing education certification points. They will monitor the testing and determine consistently weak areas that identifies opportunities for training. Agents will be expected to document the number of clientele that were trained or that were assisted with related questions. An annual report will be required. An annual report form will be developed and distributed to all participating agents by the Extension team project leader. This will be done on a fiscal year basis to be used in reporting to the ALNLA and will be due October 1,of each year.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	200	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems

Outcome #2

1. Outcome

Each ACES employee is required to provide a success story on the program activity which they felt best demonstrates the impacts of their work. These success stories contain the following elements: Why: Explain the reason the program was done, or the situation or problem that the program addressed What: Specifically what was done and how it was done. When: If this was a one-time event, the date it occurred. If it is was a series of events, or an on-going program, when it began. Where: Specific location-- the county or counties involved. Who and how many: The &ldquowho&rdquo includes both who did the program and who were the clients of the program, as well as how many people were served. So what: This is the part that gives the real meaning to &ldquosuccess&rdquo. The basic question to be answered in this part is &ldquowhat difference did this program make&rdquo. The difference may be measured in terms of dollars, or in changes in habits, lifestyles or attitudes. Whenever possible use numbers to show the effect of the program. If it is not possible to use numbers, provide a qualitative measurement like client comments or another type of testimonial about the program.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	6	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
215	Biological Control of Pests Affecting Plants
216	Integrated Pest Management Systems
205	Plant Management Systems

Outcome #3

1. Outcome

Research to increase knowledge on behavior and management of plum curculio in peaches, data collection/reporting. Increase educator knowledge on research and use of monitoring techniques. Increase grower knowledge of fruit pests, resistance management,and on-farm monitoring.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fruit pest management and use of chemicals is often guided by fear of one or two specific fruit damaging pests. The lack of specific pest knowledge increases likelihood of chemical overuse.

What has been done

Studies were set up to evaluate the effect of ground covers on survival of plum curculio, effectiveness of various baits and traps for monitoring plum curculio, and use of monitoring to direct targeted (reduced) chemical use on plum curculio control. Pocket guides, traps, pheromone, survey instruments were provided to commercial horticulture agents. Agents were provided in-service training covering IPM.

Results

Preliminary results have not shown major effect from ground covers on plum curculio emergence. Some improvement has been seen between baits and bait combinations on trap capture of plum curculio. The use of monitoring and targeting insecticide applications directed to plum curculio control and reduced fruit damage has shown good promise. Approximately an eighty percent reduction in chemical use has provided a seventy-five percent reduction in fruit damage. However, weekly applications have provided 100 percent reduction in fruit damage. Information from plum curculio and other pests monitored have been provided to growers through web blog, visits to this site have increased from 4,732 in 2006 to 12,661 in 2007. Personal contact with growers, 250, in 5 meetings increased knowledge. Research results have been disseminated to regional researchers resulting in collaboration for 2008.

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems

Outcome #4

1. Outcome

Increase on-farm use of pest monitoring in pest management decisions.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Calendar based sprays can be unnecessary, costly, and expose the producer and environment to higher levels of pesticides.

What has been done

Traps and pheromones were to be set up on farms and checked by agents on a weekly basis. Due to the severe freeze and loss of crops only the research site was used.

Results

Visits to updated web blog with crop and pest conditions increased during 2007 from 4,732 to 12,661. Using information collected, growers were changing actions in their pest management approach. Approximately 600 acres of peaches received 25 percent fewer insecticide applications (personal communication).

4. Associated Knowledge Areas

KA Code	Knowledge Area
216	Integrated Pest Management Systems

Outcome #5

1. Outcome

Provide growers, state and federal officials, and general public accurate crop and economic losses.

2. Associated Institution Types

•1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Fruit production in Alabama is made up primarily of small to medium sized farms but, accounts for approximately $15 million dollars in farm cash receipts. Crop disasters affect the livelihood of families and the economy of state and local communities. In early April a strong cold front entered Alabama. Freezing winds were preceded by unusually warm conditions in March. These warm temperatures had fruit crops blooming and young fruit developing in almost every location throughout the state. On April 6, 2007 winds in excess of 15 mph and temperatures ranging from 24 to 30 degrees F. hit central and north Alabama.

What has been done

Weather models and forecasts were provided to growers. Temperatures monitored during freeze event. Fruit damage assessments were made over a three week period statewide. Meetings were arranged between growers and commissioner of agriculture. Visits were arranged with growers and state senator. Developed survey of affected crop acres, crop losses, and economic losses. .

Results

The crops affected were apples, blackberries, blueberries, peaches, plums, and strawberries. The following table shows the acreage affected, percentage of crop destroyed and estimated loss in cash receipts for the fruit crops impacted in the state.

Crop	Est. Ac.	Pct.Crop Destroyed	Est.Loss Cash Receipts
Apples	280	100%	$ 760,000
Blackberries	20	95%	$ 74,000
Blueberries	140	95%	$ 520,000
Peaches	2,465	80%	$ 6,850,000
Plums	30	60%	$ 48,000
Strawberries	50	30%	$ 96,000
Total	2,985		$ 8,348,000

This information was provided to state officials for seeking disaster relief.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems

V(H). Planned Program (External Factors)

External factors which affected outcomes

- ? Natural Disasters (drought,weather extremes,etc.)
- ? Economy
- ? Competing Public priorities
- ? Competing Programatic Challenges

Brief Explanation

Some of the goals that were planned were not realized and other priority activities, outputs, and outcomes developed early in the year as a result of a devastating spring freeze damage to fruit crops in the major fruit growing regions of Alabama. In addition to the loss of fruit crops due to the freeze, one of the worse droughts close to 100 years occured throughout 80% of Alabama.

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- ? After Only (post program)
- ? During (during program)

Evaluation Results

Research results were analyzed following all data collection during the season. Results of orchard ground cover on plum curculio emergence was inconculsive and is being repeated. Targeted insecticide applications based on "in-season" trap captures and fruit monitoring of plum curculio and biological activity such as first peak, first egg deposition, first fruit fall revealed promise in reduction of calendar based insecticide applications. The use of web blog for dessimination of IPM and fruit orchard conditions doubled in visits during the year.

Results of fruit crop evaluation following severe winter freeze revealed that 2,985 acres of fruit crops were affected. Largest losses occurred in peaches, 2,465 acres at 80%, and apples, 280 acres at 100% loss. Economic impact results showed $8,348,000 in lost revenue to growers due to crop losses of all fruit surveyed.

Key Items of Evaluation